

REMARKS/ARGUMENTS

This Amendment is in response to the Office Action dated April 22, 2004. Claims 1-37 are pending. Claims 1-37 are rejected. Claims 1, 10, 17, 28, and 35 have been amended. Claims 5, 12, 21, 30, and 36 have been canceled. Accordingly, claims 1-4, 6-11, 13-20, 22-29, 31-35, and 37 remain pending in the present application.

Claims 1, 6, 17, and 22

Claims 1, 6, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell et al (US 6513003) (hereinafter "Angell") and further in view of Warnock et al (US 6151576) (hereinafter "Warnock"). The examiner states:

Regarding claims 1 & 17, Angell et al. disclose a method/computer medium for collaborative speech recognition in a network, comprising the steps of (Fig. 1):
 (a) Capturing speech as a plurality of audio streams by a plurality of capturing devices (Fig 1 (102)).
 (b) Producing a plurality of text streams from the best quality audio stream by at least one recognition device (Col 3, Line 49-53).

Angell et al do not disclose determining the best recognized text stream from the plurality of text streams. However, Warnock et al. teach the use of text stream reliability measure [choosing the best text stream] at the output of a speech recognition system (Col 4, Lines 10-20). In speech-to-text conversions it is beneficial to know the confidence level of speech recognition engine output so that the best text stream can be chosen.

Therefore it would have been obvious to one of ordinary skill at the time of the invention to modify Angell et al. with the use of a text stream confidence measure as taught by Warnock et al. since it would have provided a more useful speech to text conversion system...

Applicant agrees with the examiner that Angell does not disclose determining the best recognized text stream from the plurality of text streams. The examiner cites Warnock as teaching this limitation. Applicant respectfully disagrees as to the claims as amended.

Warnock discloses a recognition system that provides as output words, reliability measures, and time stamps for the beginning and ending of each word. (Col. 4, lines 10-20) However, Warnock does not disclose determining the best recognized text stream by assessing agreement

between the plurality of text streams to obtain an interim best recognized text stream, routing the interim best recognized text stream to a plurality of participant devices, modifying the interim best recognized text stream by each of the plurality of participant devices, and arbitrating the modifications to obtain the best recognized text stream, as recited in amended independent claims 1 and 17. (See specification generally, and specifically at p. 6, lines 4-13.)

Thus, Angell in view of Warnock does not teach or suggest the combination of steps or instructions as recited in amended independent claims 1 and 17 of the present invention.

Claims 2 and 18

Claims 2 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Warnock and further in view of Tai et al (US 6577333) (hereinafter “Tai”).

Applicant notes that the examiner cites “Tai et al (U.S. Patent 6618704)” throughout the Office Action. However, US Patent 6618704 is issued to Kanevsky et al, not Tai et al. Based on the content of the examiner rejections, Applicant assumes that the examiner meant to cite U.S. Patent 6,577,333 to Tai et al. Applicant arguments below concerning Tai are submitted under this assumption.

Applicant submits that claims 2 and 18 are patentable when read in combination with their respective amended independent claims 1 and 17. Thus, Applicant’s arguments concerning Angell in view of Warnock as applied to claims 1 and 17 above applies here with equal force. Even if Tai teaches the limitations as argued by the examiner, Angell in view of Warnock and further in view of Tai still does not teach or suggest determining the best recognized text streams in the recited manner. Thus, Angell in view of Warnock and further in view of Tai does not teach or suggest the combination of steps or instructions as recited in the combination of claims 1 and 2 and claims 17 and 18 of the present invention.

Claims 3 and 19

Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Warnock in view of Tai and further in view of Perez-Mendez et al (U.S. 5754978) hereinafter “Perez-Mendez”).

Applicant submits that claims 3 and 19 are patentable when read in combination with their respective amended independent claims 1 and 17, and the intervening claims 2 and 18. Thus, Applicant’s arguments concerning Angell in view of Warnock in view of Tai as applied to claims 1-2 and 17-18 above applies here with equal force. Even if Perez-Mendez teaches the limitations as argued by the examiner, Angell in view of Warnock in view of Tai and further in view of Perez-Mendez still does not teach or suggest determining the best recognized text streams in the recited manner. Thus, Angell in view of Warnock in view of Tai and further in view of Perez-Mendez does not teach or suggest the combination of steps or instructions as recited in the combination of claims 1-3 and claims 17-19 of the present invention.

Claims 5 and 21

Claims 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Warnock and further in view of Perez-Mendez. Claims 5 and 12 have been canceled. Their rejection is thus moot.

Claims 7-9, 23-27

Claims 7-9 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Warnock and further in view of Wymore (U.S. Patent 6631348) (hereinafter “Wymore”).

Applicant submits that claims 7-9 and 23-27 are patentable when read in combination with their respective amended independent claims 1 and 17. Thus, Applicant’s arguments concerning Angell in view of Warnock as applied to claims 1 and 17 above applies here with equal force. Even if Wymore teaches the limitations as argued by the examiner, Angell in view

of Warnock and further in view of Wymore still does not teach or suggest determining the best recognized text streams in the recited manner. Thus, Angell in view of Warnock and further in view of Wymore does not teach or suggest the combination of steps or instructions as recited in the combination of claims 1 and 7-9 and claims 17 and 23-27 of the present invention.

Claims 10, 13, 28, 31, 35, and 37

Claims 10, 28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Tai and further in view of Perez-Mendez. The examiner states:

Regarding claims 10, 28 & 35, Angell et al. disclose a method/computer medium for collaborative speech recognition in a network, comprising the steps of (Fig. 1):

- (a) Capturing speech as a plurality of audio streams by a plurality of capturing devices (Fig 1 (102)).
- (b) Producing a plurality of text streams from the best quality audio stream by at least one recognition device (Col 3, Line 49-53).

Angell et al. do not explicitly disclose determining the best quality audio stream from the plurality of audio streams. However, Tai et al. teach the use of several audio sensors [claimed capturing devices that uses an audio selector [arbitration device] that calculates the best audio source in order to determine the choice of camera. This technique is used to focus on speakers for applications such as video conferencing where a camera is automatically trained on a speaker among a plurality of speakers.

Therefore it would have been obvious to one of ordinary skill at the time of the invention to modify the modified Angell et al. by choosing the best audio stream as taught by Tai et al. since it would have enhanced the results of the speech recognition application.

The modified Angell et al. do not disclose determining the best recognized text stream from the plurality of text streams. However, Perez-Mendez et al. teaches the use of routing speech to different speech recognizes that have slight differences in their configuration (Fig 7). The text are then rejected or accepted based on the agreement in a comparator. This assures the most accurate result from the recognizer.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the modified Angell et al. by routing speech to several recognizers as taught by Perez-Mendez et al. would have given the best agreement on the text streams resulting in enhanced speech recognition results.

Regarding claims 13, 13, & 37, the modified Angell et al. discloses a database in which text streams are the best recognized text stream are stored (Fig 1 (110)).

Applicant agrees with the examiner that Angell as modified by Tai does not disclose

determining the best recognized text stream from the plurality of text streams. The examiner cites Perez-Mendez as teaching this limitation. Applicant respectfully disagrees as to the claims as amended.

Perez-Mendez discloses a speech recognition system with at least two speech recognition engines. Each of the engines supply a recognized-text output signal to a text comparator. The comparator compares the recognized-text outputs signals and accepts or rejects the text based on the degree of agreement between the output signals from each of the engines. (Abstract) However, Perez-Mendez does not disclose determining the best recognized text stream by assessing agreement between the plurality of text streams to obtain an interim best recognized text stream, routing the interim best recognized text stream to a plurality of participant devices, modifying the interim best recognized text stream by each of the plurality of participant devices, and arbitrating the modifications to obtain the best recognized text stream, as recited in amended independent claims 10 and 28. (See specification generally, and specifically at p. 6, lines 4-13.)

Thus, Angell in view of Tai and further in view of Perez-Mendez does not teach or suggest the combination of steps or instructions as recited in amended independent claims 10 and 28 of the present invention.

Claims 12, 14-16, 30, 32-34, and 36

Claims 12, 14-16, 30, 32-34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angell in view of Tai in view of Perez-Mendez and further in view of Wymore.

Claims 12, 30, and 36 have been canceled. Their rejection is thus moot.

Applicant submits that claims 14-16 and 32-34 are patentable when read in combination with their respective amended independent claims 10 and 28. Thus, Applicant's arguments concerning Angell in view of Tai in view of Perez-Mendez as applied to claims 10 and 28 above

applies here with equal force. Even if Wymore teaches the limitations as argued by the examiner, Angell in view of Tai in view of Perez-Mendez and further in view of Wymore still does not teach or suggest determining the best recognized text streams in the recited manner. Thus, Angell in view of Tai in view of Perez-Mendez and further in view of Wymore does not teach or suggest the combination of steps or instructions as recited in the combination of claims 10 and 14-16 and claims 28 and 32-24 of the present invention.

Claims 4, 20, and 29

Applicant notes that the examiner's rejections fail to mention claims 4, 20, and 29, and submits that claims 4, 20, and 29 are allowable.

Conclusion

Therefore, for the above identified reasons, the present invention as recited in independent claims 1, 10, 17, 28, and 35 is neither taught nor suggested by the cited references. Applicant further submits that claims 2-4, 6-9, 11, 13-16, 18-20, 22-27, 29, 31-34, and 37 are also allowable because they depend on the above allowable base claims.

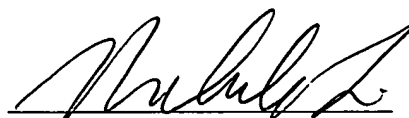
In view of the foregoing, Applicant submits that claims 1-4, 6-11, 13-20, 22-29, 31-35, and 37 are patentable over the cited references. Applicant, therefore, respectfully requests reconsideration and allowance of the claims as now presented.

The prior art made of record and not relied upon has been reviewed and does not appear to be any more relevant than the applied references.

Applicants' attorney believes this application in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted,

SAWYER LAW GROUP LLP

A handwritten signature in black ink, appearing to read 'Michele Liu', is written over a horizontal line.

Michele Liu

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Date